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ABSTRACT

The impact of the Age Discrimination in Employment Act Amendments of 1978 (ADEA) and possible options for adjusting to the impact were estimated for members institutions of the Consortium on Financing Higher Education (COFHE). Questionnaire information was gathered on active, departed, and retired faculty from 27 individual COFHE institutions. Modeling was used to separate out the effects of the change in retirement age and the effects of age structure. Findings include the following: the aggregate faculties of the 27 institutions increased 3.1 percent during 1973-1979; institutions became more heavily tenured over the period; the mean age of the aggregate faculties increased 1.5 years or 3.6 percent over the period; and schools are continuing to hire new junior faculty but in reduced numbers. Estimates of voluntary early retirement suggest that approximately half of all faculties will have retired voluntarily before age 70. The predicted mean age at retirement is calculated to be about 68.5 years, including 52 percent retiring at age 70. General considerations regarding early retirement incentive plans are covered, along with part-time employment options. It is concluded that a mandatory retirement age no lower than 70 will diminish employment opportunities for prospective junior faculty members, and will continue to do so until the 1990s. (SW)

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MAY 1980

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FACULTY RETIREMENT AT THE COFHE INSTITUTIONS: AN ANALYSIS OF THE IMPACT OF AGE 70 MANDATORY RETIREMENT AND OPTIONS FOR INSTITUTIONAL RESPONSE

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INTRODUCTION

The purpose of this study is: 1) to estimate for the COFHE schools the impact of the AGE DISCRIMINATION IN EMPLOYMENT ACT AMENDMENTS of 1978 (Pub. L. 95-256, 92 Stat. 189 cited hereafter as ADEA) on the availability of new faculty positions, and 2) to examine possible options available to the COFHE institutions for adjusting to the impact. ADEA extends the mandatory retirement age for faculty to 70 years beginning July 1, 1982. Projections of the effect of extending the retirement age (e.g. Cartter, 1976; Corwin and Knepper, 1978) indicate that there will be a marked decrease in the number of junior faculty openings from 1981-1990.

In principle, the labor market can adjust or equilibrate over time to the impact of ADEA although it may seriously impair career development for a large number of people. There has been a severe problem in recent years in that the number of "would be" entrants is greatly in excess of the number of openings in faculties. These circumstances are compounded by the recent legislation (ADEA) which will certainly delay retirements beyond ages now prevailing in most institutions.

While the issue of the impact of federal retirement-age legislation on higher education has important implications for academic planning and institution policy-making, the implications are especially significant in the

context of the more general patterns of limited and even zero growth currently experienced by academic institutions. The emergence and implications of a no-growth academic labor market following a decade of explosive expansion have been vividly described and hotly debated by a number of authors (cf., Furniss, 1973; Blackburn, 1972; Radner and Miller, 1975; Breneman, 1975). The late Allan Cartter's Ph.D.'s and the Academic Labor Market (1976) is an especially thorough description of the factors which determine the demand for faculty and depiction of the reasoning behind the prevailing conclusion that, in terms of both student enrollments and faculty expansion, in the next decade academic growth will decline and come to a virtual standstill.

At the most basic level, the problem has demographic roots. The American population is aging--consequently, the absolute size of the college-age population is declining and will continue to decline (Henderson and Plummer, 1978). While this shrinking pool of students is sufficient to decrease the demand for faculty in higher education, this demographic process is compounded by a variety of political and social issues, including the following:

--The proportion of college-age youth entering college appears to have peaked and is estimated to level off or decline over the next decade (U.S. Office of Education, 1975).

--During the last decade, student/faculty ratios decreased significantly, and additional declines are unlikely (U.S. Office of Education, 1975).

--Investments in Research and Development (R & D) have leveled off and, in many cases, experienced absolute decreases (NSF, 1975).

--As of 1970, the retirement rate of college and university faculty was less than one percent and existing projections estimate that the retirement rate will be even smaller until after the year 2000 (Cartter, 1976). Further, these projections were calculated prior to the 1978 Age Discrimination Amendment.

Given that all these factors influence the demand for college and university faculty, the implications of these trends is uniform: the outlook for growth in the academic labor market is grim indeed.

Economic theory would lead us to expect what we in fact observe in the academic labor market. In stable or declining industries, the age of the labor force increases. This proposition is supported by available statistics: in 1968-69, the median age of college faculty members was 39 (Blayer, 1970); by 1977-78, the median had increased to age 42 (Corwin and Knepper, 1978). In the case of higher education, the impact of an aging labor force is compounded by two correlates of age--rank and tenure. Over half of the academic labor force now hold the rank of associate or full

professor (Cartter, 1976). In 1968-69, 46.7 percent of academic faculty were tenured; by 1977-78, this had risen to 53 percent (Corwin and Knepper, 1978). Indeed, when one considers only faculty members at institutions with tenure systems, the proportion of tenured faculty increases to an average of 56 percent. Increasing proportions of older, high rank, tenured faculty members have a number of consequences for academic planning and institutional policy-making, including increased costs, reduction of administrative flexibility, change in the rate of inflow of new ideas and skills, reduction in the viability of academic careers, and accentuation of the disadvantaged status of minority and women faculty. Each of these consequences is problematic and warrants brief elaboration.

Cost. An aging, and thus tenured and highly ranked, faculty tends to become increasingly expensive. In terms of average compensation, in the academic year 1975-76, AAUP reports that an associate professor costs an average of $3,538 more than an assistant professor, and a full professor costs an average of $6,551 more than an associate professor (AAUP, 1976). Reduction in the proportion of low ranked, untenured faculty and systematic promotion of existing faculty obviously results in increased cost.

Reduction in Administrative Flexibility. The idea of a university or college as a multidisciplinary enterprise does not include a clear specification of the optimum distribution of disciplines (i.e., the optimum proportion of faculty in physical and life sciences, social sciences, and humanities). We do know, however, that societal demands for individuals with particular

kinds of training change over time, and there is a lagged but related change in student interest in various kinds of academic training (Freeman, 1971). The capacity of an institution to adapt its programs appropriately to changing educational and career interests of students depends, to a substantial degree, on administrative flexibility in rearranging and changing the mix of faculty. Such flexibility is increased by a flow of faculty which permits the hiring of new personnel and may be decreased by a stable, aging, tenured faculty.

Inflow of New Ideas and Skills. An aging faculty also has implications for the more amorphous concept of "institutional vitality" which appears to refer to the development and application of new knowledge and skills. It is theoretically possible for members of an aging stable faculty to remain current in regard to scientific advances (the sabbatical leave, for example, is justified in large part by the expectation of the continuing education of faculty members). The assurance of a steady inflow of recently trained junior faculty, however, may be a more attractive strategy for insuring an inflow of new ideas, techniques and skills into academe. While the association between career-age and scholarly productivity is ambiguous (due to contradictory research findings; cf., Bayer and Dutton, 1975; Allison and Stewart, 1974; Clemente, 1973), concern about the possibility of a negative relationship heightens this issue.

The Viability of Academic Careers. Preparation for an academic career requires substantial investment of time and resources. Traditionally,

this investment has been made by many of our most talented persons. If a substantial majority of persons trained for academic careers in teaching and research were forced at the beginning of their careers to take jobs outside academe or to take jobs in academe with uncertain career lines, however, we would expect the quality of the pool of persons available for academic employment to suffer in future years.

Minorities and Women. A situation of "no growth" in academic faculties and the "tenuring in" of existing faculties will affect women and minority persons adversely both in terms of initial entry and in their promotion from junior ranks. That is, in a stable or a declining labor market, minority persons and women suffer, even with the amelioration of Affirmative Action Programs, from variants of the well-known "last hired-first fired" principle.

As all of these issues discussed above demonstrate, a stable and aging faculty may cause significant problems in terms of the cost, responsivity, and quality of higher education in the future.

Current efforts to project the demand for new faculty and changes in the age structure of college and university faculty typically rely upon fixed coefficient economic adjustment models. The Cartter-McDowell faculty flow model (1975), for example, projects future faculty age distributions as a function of current age structure, changes in student enrollments and faculty/student ratios, and out-migration due to retirement and mid-career occupational shifts. The Hopkins-Bienenstock model of Stanford

University faculty (1975) incorporates these factors as well as institutional policies such as promotion rates and hiring practices.

As these models demonstrate, during times of limited or no growth in student enrollments, the age structure of college and university faculties can be most readily influenced by changes in the rate of out-migration (e.g., mid-career change for middle-aged faculty, retirement for older faculty). In Cartter's model (1976), for example, an assumption of high out-migration increases the estimated demand for young faculty by 55 percent over the demand expected when out-migration is low. Prior to this study, the latest available data (Corwin and Knepper, 1978) suggest that, on the average, 7.7 percent of all faculty migrate out of the academic labor force each year. Since older faculty members are less likely to migrate than their younger peers, however, the turnover rate of full-time tenured faculty is 4.2 percent--considerably smaller than the overall average. Further, of this 4.2 percent turnover rate of full-time tenured faculty, slightly more than half is due to retirement--with the remainder reflecting job changes (both within academe and between employment sectors).

Under current conditions, then, the turnover rate among full-time tenured faculty is quite low. When the 1978 ADEA Amendments become effective for the tenured faculty of colleges and universities in 1982, extending the age of mandatory retirement to age 70, the turnover rate of tenured faculty will decrease even further.

Specific Purpose of This Study

In order to determine precisely the impact and options available to the COFHE institutions as a result of the increased mandatory retirement age (on a faculty stable in size), information was gathered on active, departed, and retired faculty from individual COFHE institutions using a questionnaire designed for the purpose. Data were received from 27 of the 30 schools, and the aggregate tabulations are given in the Results section. Modeling was utilized to separate out the effects of the change in the retirement age and the effects of age structure. This modeling, along with a consideration of early retirement plans, is included in the Discussion section.

RESULTS

In this section a description of the tabulated data from 27 COFHE institutions is presented. Our tabulations differ slightly from those presented by Mr. Southworth. Our counts are in terms of academic years, not as of December 31 each year. We exclude engineers, data for which was furnished by two COFHE schools. We also omit approximately 60 persons coded as "retired" who stayed on at their home institutions after "retirement." An overview is given below followed by a more detailed description of the tabulations.

Overview of Tabulations on 27 COFHE Institutions

1. The aggregate faculties in the 27 COFHE institutions increased slightly (3.1%) over the 1973-1979 period.

2. Institutions became more heavily tenured over the period. There was a total increase of 546 tenured faculty members which constituted an increase of 5 percentage points (from 62.6% in 1973-74 to 67.6% in 1978-79).

3. The number of persons moving from nontenured to tenured status decreased over the period of the study.

4. The mean age of the aggregate faculties increased 1.5 years or 3.6% over the period of the study. For males, the increase was 1.9 years and for females .14 years.

5. The mean age at appointment for entering faculty members shows only a very slight increase for tenured and nontenured males as well as for nontenured females. For entering tenured females, however, there has been a moderately large decline from 52.8 years to 47.1 years.

6. There are no clear trends over the period for the age at which faculty members received tenure. For males, the mean age for moving from nontenured to tenured status over the 1973-79 period was 36.3 years. For females, it was 39.7 years.

7. Schools are continuing to hire new junior faculty but in reduced numbers. The number of new entrants per year declined over the period.

8. The percentage of females in the aggregate faculty increased 3.1 percentage points from 12.7% of the faculty in 1973-74 to 15.8% in 1978-79. The percentage of females among tenured faculty increased 1.9 points from 7.3% in 1973-74 to 9.2% in 1978-79. The percentage of females in the nontenured faculty increased 7.9 points from 21.7% in 1973-74 to 29.6% in 1978-79. Although the number of persons moving from nontenured to tenured status decreased over the period of the study, a greater percent were female in 1978-79 compared with 1973-74, i.e., 25.8% versus 12.5%.

9. Departures of tenured faculty (other than retirement and death) showed the same pattern as appointments of tenured faculty.

10. The number of retirements fluctuates over the period with no clear trend. The mean number of retirements from 1973-79 is 89.4 persons per year.

11. There has been a steady increase in early retirements for tenured males over the period of the study from only 2.8% to 25% in 1978-79.

12. There was a slight downward trend in the mean retirement age over the period of the study for tenured males from 66.9 years in 1973-74 to 65.6 years in 1977-78.

13. A much larger proportion of females stopped working after retirement, compared with males, i.e., approximately 41% vs. 13%.

Table 1: Summary Data for Combined COFHE Faculties

In Table 1 it can be seen that, during the 1973 to 1979 period, there was an increase in 243 persons (3.1%) in the aggregate active faculty size for the 27 COFHE institutions which reported data in this study. During the 1973-74 period there were a total of 7,727 total active faculty members. This number increased to 7,900 for the 1974-75 academic year, remaining fairly stable in the 1975-76 academic year at 7,898 total faculty members. By the 1976-77 academic year, the number had risen to 7,940, increasing to 7,985 in 1977-78 and finally to 7,970 in 1978-79.

The total number of tenured faculty in the active status has increased steadily from 1973 to 1979. In Table 1 it can be seen that there were 4,840 members of the active faculty who were tenured. This number increased to 4,999 in 1974-75, to 5,098 in 1975-76, to 5,192 in 1976-77, to 5,304 in 1977-78, and finally to 5,386 in 1978-79. This is a total increase of

Table 1

Summary Data for Combined COFHE Faculties

	1973-1974			1974-1975			1975-1976			1976-1977			1977-1978			1978-1979			Average for the Period		
	Number	%	Mean Age	Number	%	Mean Age	Number	%	Mean Age	Number	%	Mean Age	Number	%	Mean Age	Number	%	Mean Age	Number	%	Mean Age
All Faculty																					
Active	7727	100.0	42.1	7900	100.0	42.1	7898	100.0	42.5	7940	100.0	42.8	7985	100.0	43.2	7970		43.6	7890	100.0	42.5
Retired during or at end of year	103	1.3		87	1.1		83	1.0		79	1.0		95	1.2					89.4	1.1	
Deaths or Disabilities	13	.2		10	.1		23	.3		20	.3		15	.2					16.2	.2	
Departures	368	4.8		459	5.8		390	4.9		378	4.8		411	5.1					401.2	5.1	
Appointments	657	8.5		554	7.0		538	6.8		522	6.6		506	6.3					555.4	7.0	
Tenured Faculty																					
Active	4840	100.0	47.5	4999	100.0	47.5	5098	100.0	47.7	5192	100.0	47.9	5304	100.0	48.2	5386		48.4	5086.6	100.0	47.8
Retired during or at end of year	99	2.0	66.6	86	1.7	67.0	80	1.6	66.7	78	1.5	66.4	93	1.8	65.5				87.2	1.7	66.4
Deaths or Disabilities	12	.3	53.1	8	.2	57.2	21	.4	57.2	17	.3	59.7	13	.2	60.6				14.2	.3	57.6
Departures	58	1.2	43.0	72	1.4	45.3	59	1.2	44.4	62	1.2	45.8	60	1.1	44.8				62.2	1.2	44.7
Appointments	65	1.3	42.4	55	1.1	43.9	67	1.3	42.7	69	1.3	44.5	62	1.2	41.6				63.6	1.3	43.0
Awards of Tenure	263	5.4	37.0	210	4.2	36.6	187	3.7	36.7	200	3.9	38/1	186	3.5	37.3				209.2	4.1	36.9
Non-Tenured Faculty																					
Active	2887	100.0	33.0	2901	100.0	32.9	2800	100.0	33.1	2748	100.0	33.2	2681	100.0	33.3	2584		33.5	2803.4	100.0	33.1
Retired during or at end of year	4	.1	68.0	1		63.8	3	.1	67.4	1		65.5	2	.1	62.0				2.2	.1	65.3
Deaths or Disabilities	1		66.4	2	.1	48.6	2	.1	31.6	3	.1	48.0	2	.1	38.3				2.0	.1	46.5
Departures	310	10.7	34.2	387	13.3	33.9	331	11.8	34.5	316	11.5	34.7	351	13.7	34.5				339.0	12.1	34.4
Appointments	592	20.5	30.5	499	17.2	30.8	471	16.8	30.7	453	16.5	31.0	444	16.6	31.4				491.8	17.5	30.9

546 tenured faculty members in the 27 COFHE institutions over the period of the study. Not only has the total number of tenured faculty increased, but the percentage of the active faculty that is tenured has increased as well. In 1973-74, 4,840 of the active faculty of 7,727 were tenured (62.6%). In 1978-79, 5,386 of the total faculty of 7,970 were tenured (or 67.6%), reflecting an increase of five percentage points.

The total number of nontenured faculty in the active status declined over the period of the study. In Table 1 it can be seen that there were 2,887 nontenured faculty during the 1973-74 academic year. Although this increased modestly to 2,901 during the 1974-75 academic year, it declined thereafter to 2,800 in 1975-76, to 2,748 in 1976-77, to 2,681 in 1977-78, and finally to 2,584 in 1978-79. Comparing the 1973-74 academic year with the final 1978-79 academic year, this is a decrease in 303 persons in the nontenured status in the COFHE faculties for the 27 schools reporting in this study.

For the total faculty, there was an increase in mean age from 42.1 years in 1973-74 to 43.6 years in 1978-79, an increase in 1.5 years or 3.6% over the period of the study.

The total number of awards of tenure, as well as appointments in the nontenured category, declined over the period. In 1973-74, there were 263 awards of tenure; this declined to 186 in 1977-78. In 1973-74, there were 592 nontenured appointments. This decreased to 444 in 1977-78. Further, breakdowns of these summary data will be discussed in subsequent tables.

Tables 2a, 2b, and 2c: Characteristics of Active Faculty by Year

Table 2a provides characteristics of all active faculty year by year. It can be seen that the percentage of the aggregate COFHE faculty which was tenured increased from 62.6% to 67.6% over the period of the study. There was an increase of 3.1 percentage points in the number of female faculty members, i.e., from 12.7% in 1973-74 to 15.8% in 1978-79. The proportion of the faculty in the humanities, natural sciences, and social sciences remained constant. The aggregate faculties became more "top-heavy" with an increase in the percentage of the faculty at the rank of full professor from 37.3% in 1973-74 to 41.0% in 1978-79.

Table 2b gives the characteristics of the tenured active faculty year by year. Females constituted a larger percentage of the tenured faculty during each successive academic year from 1973-74 to 1978-79. 7.3% of the tenured faculty during the 1973-74 academic year was female. This increased to 7.6% in 1974-75, to 7.7% in 1975-76, to 8.2% in 1976-77, to 8.5% in 1977-78, and finally to 9.2% in 1978-79 with a total increase of 1.9 percentage points over the period.

The aggregate male and female data for discipline show only modest shifts over the period of the study. However, there were sex differences (not shown in Table 2b). For tenured males, the frequency distribution among the humanities, natural sciences, and social sciences remained relatively constant throughout the period of the study, with approximately

Table 2a

Characteristics of Active Faculty by Year

	1973-74			1974-75			1975-76			1976-77			1977-78			1978-79		
	Number	Mean Age	%	Number	Mean Age	%	Number	Mean Age	%	Number	Mean Age	%	Number	Mean Age	%	Number	Mean Age	%
Tenure Status																		
Tenured	4840	47.5	62.6	4999	47.5	63.3	5098	47.7	64.5	5192	47.9	65.4	5304	48.2	66.4	5386	48.4	67.6
Nontenured	2887	33.0	37.4	2901	32.9	36.7	2800	33.1	35.5	2748	33.2	34.6	2681	33.3	33.6	2584	33.5	32.4
Total	7727		100.0	7900		100.0	7898		100.0	7940		100.0	7985		100.0	7970		100.0
Sex																		
Males	6747		87.3	6827		86.4	6741		85.4	6731		84.8	6756		84.6	6711		84.2
Females	980		12.7	1073		13.6	1157		14.6	1209		15.2	1229		15.4	1259		15.8
Discipline																		
Humanities	2543		32.9	2580		32.7	2575		32.6	2568		32.3	2573		32.2	2569		32.2
Natural Sciences	2435		31.5	2478		31.4	2472		31.3	2512		31.6	2524		31.6	2529		31.7
Social Sciences	2598		33.6	2687		34.0	2698		34.2	2695		34.0	2722		34.1	2712		34.0
Undesignated	151		2.0	155		1.9	153		1.9	165		2.1	166		2.1	160		2.0
Rank																		
Assistant Professor	2222		28.8	2280		28.9	2224		28.2	2227		28.0	2210		27.7	2172		27.3
Associate Professor	1634		21.1	1670		21.1	1656		21.0	1672		21.1	1698		21.3	1713		21.5
Full Professor	2882		37.3	2958		37.4	3029		38.3	3113		39.2	3181		39.8	3267		41.0
Named Professor	632		8.2	630		8.0	640		8.1	636		8.0	640		8.0	637		8.0
Other and Unknown	357		4.6	362		4.6	349		4.4	292		3.7	256		3.2	181		2.2

Table 2b

Characteristics of Active Faculty (Tenured) by Year

	1973-74		1974-75		1975-76		1976-77		1977-78		1978-79	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Number	4840	100.0	4999	100.0	5098	100.0	5192	100.0	5304	100.0	5386	100.0
Sex												
Males	4486	92.7	4619	92.4	4704	92.3	4767	91.8	4852	91.5	4891	90.8
Females	354	7.3	380	7.6	394	7.7	425	8.2	452	8.5	495	9.2
Discipline												
Humanities	1499	31.0	1544	30.9	1576	30.9	1592	30.7	1647	31.1	1694	31.5
Natural Sciences	1680	34.7	1728	34.6	1748	34.3	1782	34.3	1804	34.0	1816	33.7
Social Sciences	1573	32.5	1637	32.7	1683	33.0	1721	33.1	1758	33.1	1779	33.0
Unassignated	88	1.8	90	1.8	91	1.8	97	1.9	95	1.8	97	1.8
Rank												
Assistant Professor	56	1.2	64	1.2	62	1.2	63	1.2	61	1.2	57	1.1
Associate Professor	1292	26.7	1366	27.1	1382	27.1	1403	29.0	1444	27.2	1451	26.9
Full Professor	2858	59.0	2940	58.8	3013	59.1	3091	59.5	3163	59.6	3248	60.3
Named Professor	626	12.9	624	12.8	634	12.4	630	12.1	633	11.9	626	11.6
Other and Unknown	8	.2	5	.1	7	.1	5	.1	3	.1	4	.1

29% in the humanities, 35% in the natural sciences, and 33% in the social sciences. For tenured females, there was a modest shift in the distribution of discipline over the period of the study. In 1973-74, 47.7% of the tenured females were engaged in the humanities, 23% in the natural sciences, and 27.3% in the social sciences. By 1978-79 the percentage of women in the humanities had climbed slightly to 49.7%, those in the natural sciences had decreased to 19.4%, and those in the social sciences had increased to 28.7%.

The aggregate male and female data on distribution of rank are given in Table 2b. There are sex differences, however (not shown). The distribution of rank for tenured females differs from that for tenured males. For tenured males, by far the greatest percentage are full professors. For females, the distribution is more evenly split between full and associate professors. From the 1973-74 academic year to the 1978-79 academic year, there is a shift to a greater percentage of female associate professors relative to full professors. In 1973-74, 42.4% of the tenured females were associate professors and 40.1% were full professors. By 1978-79, 46.7% were associate professors, and 39.8% were full professors. There was also a decline in the percentage of named professors over the period for females as there was for males. For females, 11.6% of the tenured active female faculty were named professors in 1973-74; this declined to 8.1% in 1978-79.

Although the total number of nontenured faculty declined, the

percentage of nontenured faculty which was female increased considerably over the period. As shown in Table 2c, during the 1973-74 academic year, 21.7% of the nontenured faculty was female. This increased to 23.9% in 1974-75, to 27.3% in 1975-76, to 28.5% in 1976-77, to 29.0% in 1977-78, and finally to 29.6% in 1978-79. This is an increase of 7.9 percentage points over the period of the study.

Among nontenured faculty, there was a slight decline in the number of persons in the humanities, from 36.2% in 1973-74 to 33.9% in 1978-79. There are sex differences, however. An examination of the discipline for nontenured females (not shown) also shows a low percentage of women in the natural sciences. Also, the number of women in the social sciences is greater for nontenured females than tenured females and increases over the period of the study. In 1973-74, 49.0% of nontenured females were in the humanities, 14.8% in natural sciences, and 34.3% in the social sciences. By 1978-79 there was a modest decline of women in the humanities to 47.7%; the number of women in the natural sciences stayed fairly constant, and the number of women in the social sciences increased slightly to 36.0%.

It can be seen in Table 2c that most nontenured active faculty are at the rank of assistant professor. Again, there are sex differences, however (not shown). For nontenured males, the percentage of instructors and associate professors declined over the period of the study. In 1973-74, 9.2% of the nontenured males were instructors, 76.3% were assistant professors, and 13.3% were associate professors. By 1978-79 the

Table 2c

Characteristics of Active Faculty (Nontenured) by Year

	1973-74		1974-75		1975-76		1976-77		1977-78		1978-79	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Number	2887	100.0	2901	100.0	2800	100.0	2748	100.0	2681	100.0	2584	100.0
Sex												
Males	2261	78.3	2208	76.1	2037	72.7	1964	71.5	1904	71.0	1820	70.4
Females	626	21.7	693	23.9	763	27.3	784	28.5	777	29.0	764	29.6
Discipline												
Humanities	1044	36.2	1036	35.7	999	35.7	976	35.5	926	34.5	875	33.9
Natural Sciences	755	26.1	750	25.9	724	25.9	730	26.6	720	26.8	713	27.6
Social Sciences	1025	35.5	1050	36.2	1015	36.2	974	35.4	964	36.0	933	36.1
Undesignated	63	2.2	65	2.2	62	2.2	68	2.5	71	2.7	63	2.4
Rank												
Assistant Professor	2166	75.0	2216	76.4	2162	77.2	2164	78.7	2149	80.2	2115	81.8
Associate Professor	342	11.8	304	10.5	274	9.8	269	9.8	254	9.5	262	10.1
Full Professor	24	.8	18	.6	16	.6	22	.8	18	.7	19	.7
Named Professor	6	.2	6	.2	6	.2	6	.2	7	.2	11	.4
Other and Unknown	349	12.1	357	12.3	342	12.2	287	10.4	253	9.4	177	6.9

percentage of instructors had declined to 5.9%, that for assistant professors had increased to 81.8% with a concomitant decline for associate professors to 10.7%. The distribution of rank for nontenured females shows a dramatic change from the 1973-74 academic year to that in 1978-79. In 1973-74, 20.1% of the nontenured females were instructors. This declined 11.6 percentage points to 8.5% in the 1978-79 academic year. These nontenured females were apparently promoted to assistant professor status. In 1973-74, 72.8% of the nontenured females were assistant professors. This increased to 82.5% in the 1978-79 academic year. There was also a modest increase in the percent of nontenured females who were associate professors. In 1973-74, 6.8% of the nontenured females were associate professors; this increased to 8.8% in the 1978-79 academic year.

Table 3: Characteristics of Retiring Faculty by Year

Table 3 gives characteristics on the retiring faculty for the 27 COFHE schools which reported data for the study. In 1973-74, 103 persons retired, decreasing to 87 in 1974-75, to 83 in 1975-76, to 79 in 1976-77, up to 95 in 1977-78, for an average of 89.4 persons during that five-year period. No clear trends were shown for the distribution of females and males. The maximum percentage of females retired in 1973-74, i.e., 20.4%. The minimum percentage retired in 1975-76, which was 6.0%. The preponderance of persons who retired in all years were tenured.

The academic discipline of retirees varied during each of the years

Table 3

Characteristics of Retiring Faculty by Year

	1973-74		1974-75		1975-76		1976-77		1977-78		5-Yr. Period Average	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Tenure Status												
Tenured	99		86		80		78		93		87.2	
Nontenured	4		1		3		1		2		2.2	
Total	103		87		83		79		95		89.4	
Sex												
Males	82	79.6	76	87.4	78	94.0	70	88.6	85	89.5	78.2	
Females	21	20.4	11	12.6	5	6.0	9	11.4	10	10.5	11.2	
Discipline												
Humanities	47	45.6	36	41.4	29	34.9	25	31.6	34	35.8	34.2	38.3
Natural Sciences	29	28.2	22	25.3	24	28.9	24	30.4	30	31.6	25.8	28.9
Social Sciences	25	24.3	23	26.4	29	34.9	27	34.2	28	29.5	26.4	29.5
Undesignated	2	2.0	6	6.9	1	1.2	3	3.8	3	3.1	3.0	3.3
Rank												
Instructor	0	0	0	0	1	1.2	0	0	0	0	.2	.2
Assistant Professor	2	1.9	3	3.4	1	1.2	0	0	3	3.2	1.8	2.0
Associate Professor	9	8.7	6	6.9	3	3.6	4	5.1	5	5.3	5.4	6.0
Full Professor	66	64.1	55	63.2	55	66.3	51	64.6	59	62.1	57.2	64.0
Named Professor	23	22.3	23	26.4	23	27.7	23	29.1	28	29.5	24.3	26.8
Others and Unknown	3	2.9	0	0	0	0	1	1.3	0	0	.8	.9

Table 3 (continued)

	1973-74		1974-75		1975-76		1086-77		1077-78		5-Yr. Period Average	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Reason for Retirement												
Reached mandatory retirement age	72	69.9	53	60.9	59	71.1	48	60.8	51	53.7	56.6	
Voluntary early retirement:												
Not related to health	5	4.9	4	4.6	9	10.8	11	13.9	19	20.0	9.6	
Related to health	2	1.9	2	2.3	4	4.8	2	2.5	3	3.2	2.6	
Early retirement:												
Encouraged by institutional plan	6	5.8	9	19.3	0	0	5	6.3	8	8.4	5.6	
Under special arrangements	0	0	2	2.3	0	0	0	0	2	2.1	.8	
Other	6	5.8	5	5.7	8	9.6	2	2.5	6	6.3	5.4	
Unknown	12	11.7	12	13.8	3	3.6	11	13.9	6	6.3	8.8	

in the study and shows no clear trends. Most of the retirees were tenured and male. For tenured male retirees, the distribution predominantly consisted of full and named professors, with few retirees in the associate and assistant professor ranks. The year 1973-74 was fairly typical: six associate professors retired, 53 full professors, and 21 named professors. For females, however, although the majority of the retirees were full professors, the distribution of retirees was broader across the ranks. For example, in 1973-74, one instructor retired, one assistant professor, two associate professors, twelve full professors, and two named professors.

The main reason for retirement was reaching mandatory retirement age. There were sex differences, however. For tenured males, there has been a distinct increase in early retirements over the period of the study. In 1973-74, only 2.8% of the retirements were early, increasing to 3.1% in 1974-75, 11.1% in 1975-76, to 16.9% in 1976-77, to 20.2% in 1977-78, and to 25.0% in 1978-79. Tenured females were more likely to retire early in the beginning years of this study; for example, in 1973-74, 18.7% retired early, and 20.0% retired early in 1974-75. For both males and females, the preponderance of retirements were mandatory, although these declined over the period of the study, from 78.9% to 50.0% from 1973-74 for males, and from 75.0% in 1973-74 to 50.0% in 1977-78 for females.

The destination of retirees is not shown but may be of interest to the reader. The striking difference between tenured males and tenured females upon retiring was that a much larger proportion of females stopped working

after retirement than males, and a much lower proportion became emeriti. For example, for females, in 1973-74, 44.4% stopped working, 36.6% in 1974-75, 40.0% in 1975-76, 37.5% in 1976-77, and 45.0% in 1977-78. For males, the percentages are much lower: 12.4% in 1973-74, 12.0% in 1974-75, 14.7% in 1975-76, 14.3% in 1976-77, and 10.6% in 1977-78. The percent of retired tenured women who became emeriti ranged from 0% in 1973-74 to 20.0% in 1975-76. For males, however, the minimum who became emeriti were 21.0% in 1973-74 to 34.3% in 1976-77. For tenured males, a few go to other academic jobs, involve themselves in consulting, or work for nonprofit or profit organizations. Almost one-half of the destinations for tenured males are unknown. A smaller percentage is unknown for females.

Analysis of the data on age of retirement (not shown) indicates a very slight downward trend in the age of retirement for tenured males over the period of the study. For 1973-74 the mean age of retirement for tenured males was 66.9. Although it increased to 67.0 in 1974-75, it continued downward thereafter. In 1975-76, the mean age of retirement for tenured males was 66.8. It was 66.4 in 1976-77, 65.6 in 1977-78, and in 1978-79, although only based on eight persons, the mean retirement age was 64.8. For tenured females the mean age of retirement was more variable. The mean age for tenured males at retirement over the years from 1973 to 1978 was 66.5 years; for tenured females, it was 65.6; for all tenured faculty, it was 66.4.

Tables 4a and 4b: Characteristics of Entering Faculty

The number of faculty entering with tenure, shown in Table 4a, stayed relatively constant over the period of the study. Most were male social scientists, recruited from other faculties.

There was a decline in the number of faculty entering without tenure (shown in Table 4b)--from 592 in 1973-74 to 444 in 1977-78. The percentage of females was highest in 1974-75 at 32.7%. Most of the faculty entering without tenure came from Ph.D. programs and other faculties.

Tables 5a and 5b: Characteristics of Departing Faculty by Year

In Tables 5a and 5b, it is shown that the number of departures over the period of the study for both tenured and nontenured faculty is relatively constant, and most departers are male. Although the distribution for departers by discipline varies some over the sample for aggregate male and female data, there is a percentage increase for departers in the social sciences, especially for departing tenured males. In 1973-74, 24.6% of the departing tenured males were in the humanities, 27.7% in the natural sciences, and 47.7% in the social sciences. This compares with 29.9%, 35.9%, and 33.2% in these three categories, respectively, in the active faculty in this period. This tendency for departing tenured males to be biased heavily toward those in the social sciences continues in the 1978-79 academic year (not shown in Table 5a) where 17.4% were in the humanities,

Table 4a

Characteristics of Faculty Entering with Tenure by Year

	1973-74			1974-75			1975-76			1976-77			1977-78			5-Yr. Period Average		
	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%
Number	65	42.4	100.0	55	43.9	100.0	67	42.7	100.0	69	44.5	100.0	62	41.6	100.0	63.6	43.0	100.0
Sex																		
Males	56	46.6		49	42.9		62	42.5		64	44.5		55	42.3		57.2		42.8
Females	9	47.1		6	51.8		5	44.6		5	44.2		7	36.4		6.4		44.8
Discipline																		
Humanities	17		26.2	15		27.3	21		31.3	26		37.7	18		29.0	19.4		
Natural Sciences	19		29.2	11		20.0	15		22.4	11		15.9	16		25.8	14.4		
Social Sciences	28		43.1	26		47.3	27		40.3	30		43.5	27		43.6	27.6		
Undesignated	1		1.5	3		5.4	4		6.0	2		2.9	1		1.6	2.2		
Source of Entry																		
Ph.D. Program	1		1.5	0		0	1		1.5	1		1.4	2		3.2	1.0		1.6
Postdoctoral or internship program	2		3.0	0		0	2		3.0	2		2.9	0		0	1.2		1.9
Another faculty	32		49.2	34		61.8	32		47.8	41		59.4	28		45.2	33.4		52.5
Non-profit organization	2		3.0	3		5.5	4		6.0	0		0	0		0	1.8		2.8
Profit organization	1		1.5	1		1.8	1		1.5	1		1.4	3		4.8	1.4		2.2
Other	1		1.5	0		0	0		0	1		1.4	3		4.8	1.0		1.6
Unknown or not reported	26		40.0	17		30.9	27		40.3	23		33.3	26		41.9	23.8		37.4

Table 4b

Characteristics of Faculty Entering Without Tenure by Year

	1973-74			1974-75			1975-76			1976-77			1977-78			5-Yr. Period Average		
	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%	#	Mean Age	%
Number	592	30.5	100.0	499	30.8	100.0	471	30.7	100.0	453	31.0	100.0	444	31.4	100.0	491.8		100.0
Sex																		
Males	429	30.4	72.5	336	30.6	67.3	334	30.3	70.9	334	30.8	73.7	310	31.0	69.8	348.6		70.9
Females	163	30.8	27.5	163	31.3	32.7	137	31.6	29.1	119	31.5	26.3	134	32.2	30.2	143.2		29.1
Discipline																		
Humanities	195		32.9	181		36.3	144		30.5	139		30.7	138		31.1	159.4		32.4
Natural Sciences	160		27.0	139		27.7	143		30.4	129		28.5	136		30.6	141.4		28.8
Social Sciences	223		37.7	172		34.5	169		35.9	174		38.4	161		36.3	179.8		36.6
Undesignated	14		2.4	7		1.4	15		3.2	11		2.4	9		2.0	11.2		2.2
Source of Entry																		
Ph. D. Program	220		37.2	200		40.1	176		37.4	161		35.6	140		31.5	179.4		36.5
Postdoctoral or internship program	50		8.4	55		11.0	49		10.4	45		9.9	48		10.8	49.4		10.0
Another faculty	130		22.0	86		17.2	82		17.5	93		20.5	97		21.8	97.6		19.8
Non-profit organization	9		1.5	6		1.2	9		1.9	10		2.2	14		3.2	9.6		2.0
Profit organization	3		.5	5		1.0	3		.6	2		.4	0		0	2.6		.5
Other	14		2.4	16		3.2	15		3.2	16		3.5	17		3.8	15.6		3.2
Unknown or not reported	166		28.0	131		26.3	137		29.1	126		27.8	128		28.8	137.6		28.0

Table 5a

Characteristics of Departing Faculty (Tenured) by Year
(Does Not Include Retiring Faculty)

	1973-1974		1974-1975		1975-1976		1976-1977		1977-1978		5-Yr. Period Average	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Number Tenured	70	100.0	80	100.0	80	100.0	79	100.0	73	100.0	76.4	100.0
Sex												
Males	66	94.3	75	93.8	77	96.2	76	96.2	69	94.5	72.6	95.0
Females	4	5.7	5	6.2	3	3.8	3	3.8	4	5.5	3.8	5.0
Discipline												
Humanities	17	24.3	18	22.5	28	35.0	21	26.6	14	19.2	19.6	25.7
Natural Sciences	19	27.1	23	28.8	21	26.2	21	26.6	26	35.6	22.0	28.8
Social Sciences	33	47.1	39	46.2	31	38.8	34	43.0	32	43.8	33.4	43.7
Undesignated	1	1.4	2	2.5	0	0	3	3.8	1	1.4	1.4	1.8
Rank												
Assistant Professor	0	0	1	1.3	1	1.3	3	3.8	2	2.8	1.4	1.8
Associate Professor	25	35.7	17	21.2	25	31.2	22	27.8	20	27.4	21.8	28.5
Full Professor	42	60.0	56	70.0	44	55.0	49	62.0	39	53.4	46.0	60.2
Named Professor	3	4.3	6	7.5	9	11.2	4	5.1	11	15.1	6.6	8.6
Others and Unknown	0	0	0	0	1	1.3	1	1.2	1	1.4	.6	.8
Reason for Departure												
Death	11	15.7	8	10.0	19	23.8	14	17.7	12	16.4	12.8	16.8
Disability	1	1.4	0	0	2	2.5	3	3.8	1	1.4	1.4	1.8
Voluntary	54	77.1	64	80.0	53	66.2	55	69.6	57	78.1	56.6	74.1
Term Appointment not renewed												
Change in funding position of institution			1	1.2			2	2.5			.6	.8
Dismissal for cause												
Unknown	4	5.7	7	8.8	6	7.5	5	6.3	3	4.1	5.0	6.5

Table 5a (continued)

	1973-1974		1974-1975		1975-1976		1976-1977		1977-1978		5-Yr. Period Average	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Destination after Departure												
Not working			1		2		1		1			
To another academic job	28		30		25		30		34			
Emeritus at same institution	1				1				2			
To a non-profit institution	4		5		9		4		5			
To a profit institution	2		1		2		1					
Private consulting	1								1			
Others and Unknown	34		43		41		41		29			
Training									1			

Table 5b

Characteristics of Departing Faculty (Nontenured) by Year
(Does Not Include Retiring Faculty)

	1973-74		1974-75		1975-76		1976-77		1977-78		5-Yr. Period Average	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Number Nontenured	311	100.0	389	100.0	333	100.0	319	100.0	353	100.0	341.0	100.0
Sex												
Males	257	82.6	320	82.3	251	75.4	227	71.2	256	72.9	262.2	76.9
Females	50	17.4	69	17.7	82	24.6	92	28.8	97	27.5	78.8	23.1
Discipline												
Humanities	111	35.7	147	37.8	115	34.5	114	35.7	112	31.7	119.8	35.1
Natural Sciences	88	28.3	111	28.5	73	21.9	83	26.0	91	25.8	89.2	26.2
Social Sciences	104	33.4	127	32.7	139	41.7	116	36.4	138	39.1	124.8	36.6
Undesignated	8	2.6	4	1.0	6	1.8	6	1.9	12	3.4	7.2	2.1
Rank												
Assistant Professor	236	75.9	315	81.0	265	79.6	256	80.3	281	79.6	270.6	79.4
Associate Professor	29	9.3	32	8.2	24	7.2	30	9.4	28	7.9	28.6	8.4
Full Professor	0	0	2	.5	0	0	2	.6	1	.3	1.0	.3
Named Professor	1	.3	0	0	0	0	0	0	1	.3	.4	.1
Others and Unknown	45	14.5	40	10.3	44	13.2	31	9.7	42	11.8	40.4	11.8
Reason for Departure												
Death	1	.3	2	.5	1	.3	2	.6	1	.3	1.4	.4
Disability	0	0	0	0	1	.3	1	.3	1	.3	.6	.2
Voluntary	136	43.7	168	43.2	153	45.9	140	43.9	155	43.9	150.4	44.1
Term Appointment not renewed	137	44.1	180	46.3	153	45.9	138	43.3	144	40.8	150.4	44.1
Change in funding position of institution	2	.6	6	1.5	6	1.8	6	1.9	12	3.4	6.4	1.8
Dismissal for cause												
Unknown	35	11.3	33	8.5	19	5.7	32	10.0	40	11.3	31.8	9.3

Table 5b (continued)

	1973-74		1974-75		1975-76		1976-77		1977-78		5-Yr. Period Average	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Destination after Departure												
Not working	8	2.6	5	1.3	7	2.1	6	1.9	7	2.0	6.6	1.9
To another academic job	96	30.9	138	35.5	114	34.2	96	30.1	115	32.9	112.0	32.8
Emeritus at same institution	2	.6	3	.7	4	1.2	10	3.1	7	2.0	5.2	1.5
To a non-profit institution	19	6.1	23	5.9	16	4.8	16	5.0	15	4.2	17.8	5.2
To a profit institution	12	3.9	11	2.8	18	5.4	16	5.0	16	4.5	14.6	4.3
Private consulting	2	.6	3	.7	3	.9	3	.9	3	.8	2.8	.8
Others and Unknown	165	53.6	191	49.1	166	49.8	165	51.7	179	50.7	173.2	50.8
Training	7	2.3	15	3.9	5	1.5	7	2.2	10	2.9	8.8	2.6

37.7% in the natural sciences, and fully 43.5% in the social sciences. In 1978-79, although the sample is small, 66.7% of the departing tenured males were in the social sciences. For nontenured males, there are variations in the distribution among disciplines. However, aside from the 1978-79 academic year, in which the discipline of nontenured males who departed was fairly high in the natural sciences, there is a slight tendency toward the largest percentage being in the social sciences.

For females in the tenured status, the numbers are so small that it would be difficult to come to any specific conclusions regarding discipline. For nontenured females, the percentage of female departers in the social sciences tends to be higher proportionately than females in the active faculty status. In 1973-74, 37.3% of the departing nontenured females were in the humanities, 17.6% in the natural sciences, and 43.1% in the social sciences. This compares with a distribution in the active faculty for nontenured females of 49.0% in the humanities, 14.8% in the natural sciences, and only 34.4% in the social sciences, respectively; this is an increase of 8.8 percentage points for departers over active faculty among nontenured females in the social sciences. By 1978-79, 50.0% of the nontenured female departers were in the social sciences, and fully 66.7% in the 1978-79 sample.

There is no clear trend in the rank of departing tenured faculty. For departing tenured males, named professors who have left during this period range from 4.5% to 14.0%. For nontenured males, there is a slight

increase in departing assistant professors from 78.3% to 81.2% in the 1977-78 academic year. There are not enough departers in the 1978-79 academic year to draw any conclusions. There are no major trends in distribution in rank among the nontenured female departers over the period of the study.

A preponderance of departures for tenured faculty members, both male and female, was voluntary. For nontenured males and females there was some variation, but the two main reasons, which were about equal in percentages, were voluntary departures and term appointments not renewed.

It is difficult to draw any conclusions about the destination of departing faculties because a large proportion of destinations, close to 50%, are unknown over the sample. In general, however, the largest proportion of those faculty on whom information was known went to other academic jobs.

DISCUSSION

Estimates of the Impact on Retirements

The size of the impact of increasing the mandatory retirement age to 70 (in terms of retirements "lost" per year), and its duration in years, depends on the age structure of the faculty as well as the mean age of retirement and the distribution of retirement ages around the mean.

We shall state briefly our main findings at the outset and then explain in much more detail how they were derived.

The law change will, sooner or later, result in the loss of about two (not five) cohorts of retirements, spread over about thirteen years. This impact may be deferred in part, but it will take place sooner or later. The calculation is simple: the mean age of retirement, we estimate, will rise about two years from its present level, so that number of retirements equal in size to two cohorts will be "lost."

Since these relationships are rather complex, we shall first consider the impact in various hypothetical situations before presenting our estimates based on the actual data from the COFHE schools. We do this in order to illustrate the separate effects of the variables relevant to the impact so that their interaction is clear. The hypothetical examples to be presented will help to explain why our results differ from those which might be expected by a casual examination of the issues.

Intuitively, it might be expected that the impact of raising the retirement age from 65 to 70 would last only 5 years. For example, retirements might be eliminated altogether for 5 years, after which period they would rise to the former level. This apparently commonsense result holds only under highly restrictive conditions farthest removed from those found in the COFHE institutions. Or, it might be expected that the adjustment to the new retirement age would be completed in five years, with retirement not necessarily dropping to zero during the adjustment period. This also is not the case. We will show here that adjustment will take 15-16 years as a consequence of the existing age structure of COFHE faculties.

Let us consider several hypothetical cases in order to illustrate with more clarity the effects of differences in age composition. Suppose, for example, that the 27 COFHE faculties examined had a "balanced" age structure; that is, each age cohort had precisely the same number of persons. If all persons moved into tenure at precisely the same age, then the cohort size would jump from zero in the age bracket just preceding that at which tenure is awarded to the "balanced" age cohort size. Likewise, if everyone retired at precisely the same age, each cohort would contain the same number and then within one year drop to zero. Such an hypothetical case is illustrated in Figure 1. A tenured faculty of 5400 persons (the approximate size of the 27 Arts and Sciences faculties in 1978-79) would be distributed across 30 age cohorts if all received tenure at age 37 and retired at age 66 (again, approximating actual means) with 180 persons in each cohort.

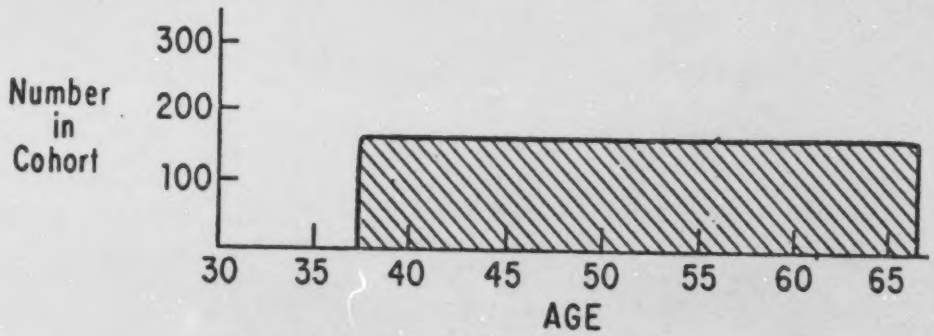

Figure 1. Hypothetical distribution in which a tenured faculty of 5400 persons (the approximate size of the 27 Arts and Sciences COFHE faculty in 1978-79) would span 30 age cohorts if all received tenure at age 37 and retired at age 66.

However, since faculty members retire at different ages, the number in each cohort starts to decline at approximately age 60. Furthermore, persons move into tenure status at different ages. Another hypothetical faculty for the 27 COFHE schools would thus be that shown in Figure 2a where the number in each cohort starts at zero (at around age 29) and then gradually ascends to the indicated cohort size at around age 40 by which time the process of awarding tenure is virtually complete under present practices at all COFHE schools. Such an hypothetical faculty for the 27 COFHE schools in 1978-79 is shown in Figure 2a. As soon as the cohort size has attained its maximum, the number in each cohort is approximately 175. (This is slightly below the first example of 180 as a result of the age patterns of entries and retirements.) In such an hypothetical tenured faculty, there would be approximately 175 retirements per year; some would take place at 60, some at 61, and so forth on through age 70. As long as the age distribution of retirements did not change, the number of retirements each year would equal 175. Thus, in this model, persons

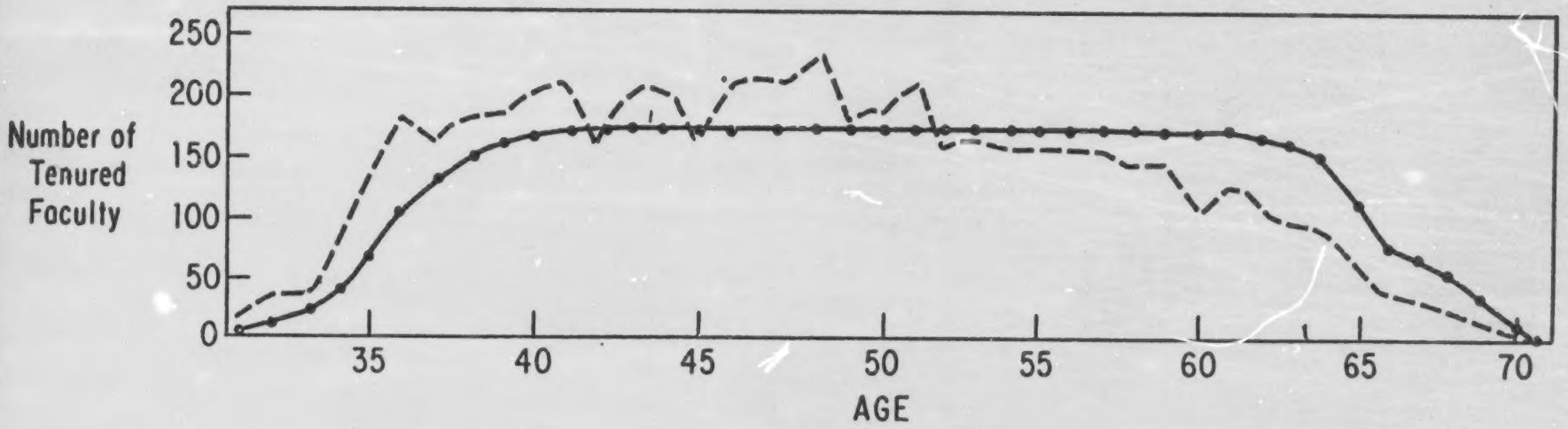

Figure 2a. Hypothetical age distribution showing persons moving into tenure at variable ages beginning at age 29, remaining constant from 20 to 60, and tapering off at 60 because of early retirements. The actual age distribution for 27 COFHE in 1978-79 is superimposed.

retiring would just be replaced by approximately 175 entries into tenure at the other end of the age spectrum. Those entering tenure would again, of course, begin at different ages as they do now, but as long as the mean age of entry into tenure and the distribution around that mean did not change, the number entering would be 175 and the constant size, "balanced" age composition would continue forever.

Figure 2a also shows (with the jagged line) the actual age distribution of COFHE tenured faculties. As that schedule clearly shows, from age 51 onward, there are fewer persons in each age cohort than would be present if the age structure were "balanced." At ages below 51, there are more persons in each age cohort (with only two exceptions) than would be the case in a "balanced" age structure. Figures 2b and 2c give the age distribution for tenured and nontenured faculties in 1973-74 and 1978-79.

Since the present mean age of retirement is slightly over 65, the implications of the actual age distribution shown in this schedule should be examined carefully. For the next 13 years, the number of retirements lies below that which would take place if the age structure were balanced, without any change in the law. We say 13 rather than 15 (age 66-51=15) because there are, after all, some retirements before age 66. Thus, the quite large oncoming cohorts move into retirement zones soon enough to raise the number of expected retirements under the present age structure to 175 somewhat before 15 years. It further follows that, from 1991 or 1992 forward, there will be more retirement than 175; indeed, in some years considerably more.

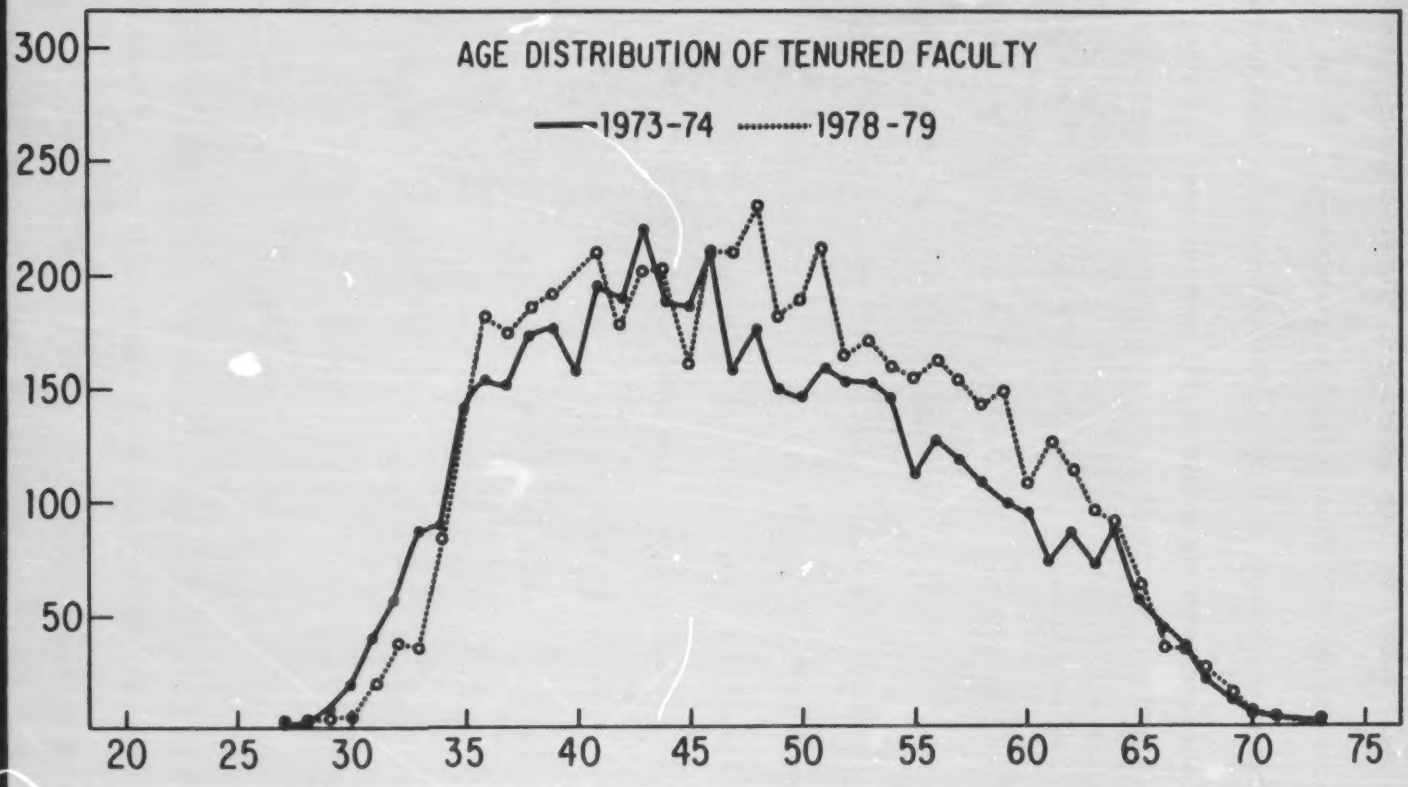
AGE DISTRIBUTION OF TENURED FACULTY
1973-74
1978-79
300
250
200
150
100
50
20
25
30
35
40
45
50
55
60
65
70
75

Figure 2b.

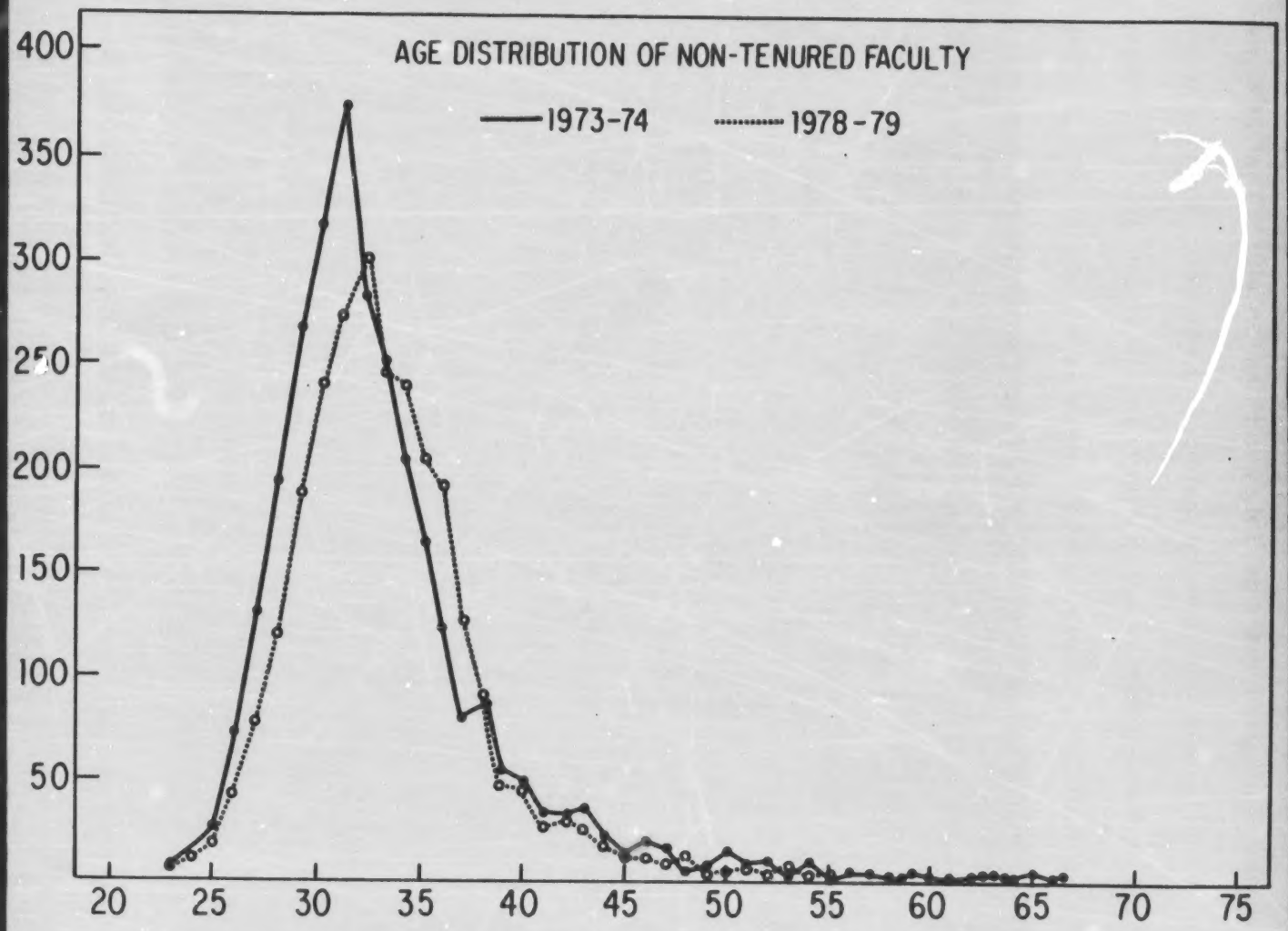
AGE DISTRIBUTION OF NON-TENURED FACULTY
1973-74
1978-79
400
350
300
250
200
150
100
50
20
25
30
35
40
45
50
55
60
65
70
75

Figure 2c.

The statements above refer to the age structure of the COFHE faculties in the aggregate treated as if they were one faculty. It might be asked if these conclusions hold for each individual institution. We have prepared for each institution both an age profile of its tenured faculty as it presently exists as well as an age profile which would exist under a "balanced" age composition. We used each institution's own practices with respect to the mean age at which retirement takes place and the distribution around that mean. Every COFHE faculty has the general characteristics described above; the only difference is the age at which the number in the cohort begins to fall below the "balanced" age cohort size. The earliest such age that we have observed is 46 and the latest is 53; that is to say, the conclusions with respect to retirement behavior drawn from the age structure of the total COFHE faculties will apply with equal force to each institution. The only difference between institutions is the time required for moving from a "subnormal" number of retirements to "larger than normal" number of retirements. By way of comparison, we show in Figure 3 the same calculations for the COFHE faculties as they existed in the academic year 1973-74. The "cross-over point" from smaller to larger cohorts then took place at an earlier age.

We further underscore the importance of age structure by referring back to one of the basic premises of this study. Each COFHE institution presumably values the constant inflow of new appointments each year for purposes of institutional vitality in each of the disciplines. If that were not

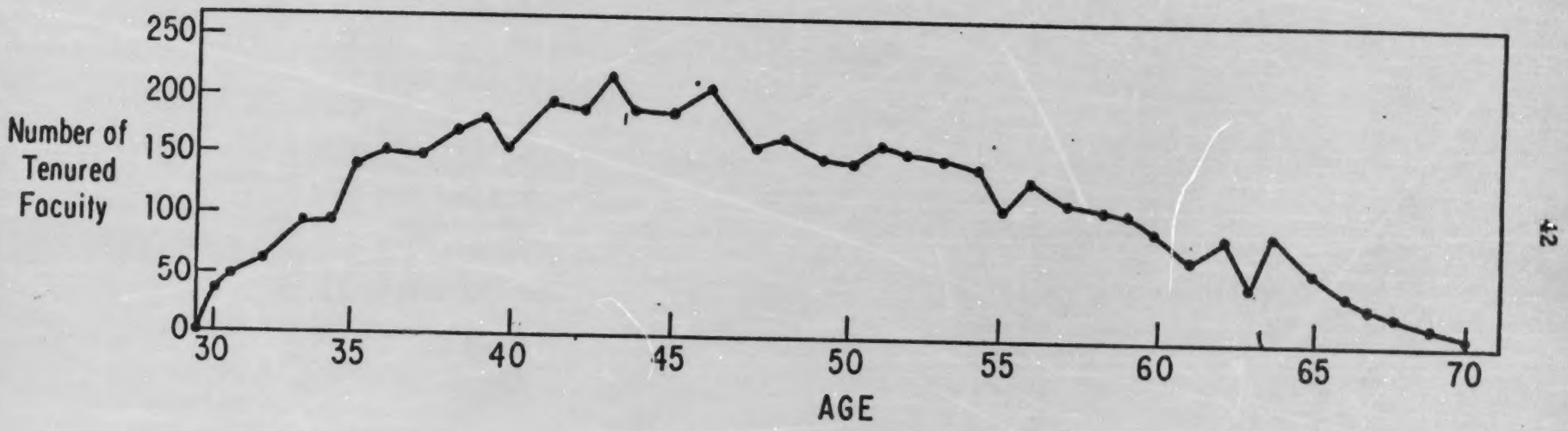

Figure 3. Age distribution for 27 COFHE faculties in 1973-74.

so, then there would be no concern at all with the change in the retirement age and the prospect of diminished capabilities to make new appointments through some period. If institutions have this concern, it then follows that they should be equally concerned with the age composition of their faculties. That is, if age structures produce large changes from one period to another in the number of appointments to be made, then age structures are presumably important. On the other hand, it is altogether understandable why COFHE faculties in the aggregate, and each one taken individually, exhibit the characteristics shown. "Over-populated" cohorts represent the expansionary phase of higher education and its faculties and the rise in the number of persons receiving their Ph.D.'s in the early 1960's. Indeed, considering all faculties in the nation, the age structure could hardly be otherwise.

Let us now turn our attention to the impact of the change in retirement age under other hypothetical conditions, and then return to see how those conclusions are altered quite dramatically when the existing age structure is introduced into the calculations.

Suppose the COFHE tenured faculties in the aggregate had a "balanced" age structure with approximately 175 persons in each age cohort as shown in Figure 2. Further, suppose that everyone retired at 65 so that (apart from deaths and disabilities) the number of persons up to age 65 was 175 in each cohort and zero thereafter. Now consider an extreme example of the impact of Federal Legislation--one in which everyone defers retirement

until age 70. In the first year after the new law (and the new retirement behavior) took effect, there would abruptly be "zero" retirements, and there would be 175 people in the age 66 cohort. The second year there would again be zero retirements with 175 people moving into the next older age cohort and so on. That is to say, for five years there would be zero retirements. At the conclusion of the five-year period, when the entire oldest cohort reached age 70, retirements would again jump to 175. The duration of the impact would have been precisely five years, and the number of new appointments lost would be five times 175, after which conditions would resume as they had been before. This is one of the cases referred to earlier in this section.

Next consider the other "balanced" age structure referred to earlier with retirements taking place at different ages, e.g. a few at 60, a few more at 61, and so forth, with the last few taking place at age 70. Suppose that the mean age of retirement is the present 66.4 and that it thereafter goes to 70. In the first year after the law change, the number of retirements would not drop to zero since some voluntary early retirements would continue to take place, and there would still be some (small) number of people approaching age 70. Those previously constrained to retire at some age (typically 65 or 68) would continue for one more year; it is their continuation which causes the number of retirements to drop. In the following year, the number of retirements would rise somewhat from the lowest level experienced in the first year of the impact. The age-specific voluntary

early retirements continue to take place, and a few more persons reach age 70 in this second year. As we move this system forward year by year, it is clear that the number of retirements gradually recovers to 175 per year, and the entire adjustment takes place over a 5-year period. The presence of voluntary early retirements serves to pull the mean age of retirement below 70. Therefore, the number of retirements "lost" is less than 5 full cohorts, and the effects are spread over a 5-year period, after which things proceed as they did before the law changed. The time impact year by year during the 5-year transition period is shown in Figure 4. To repeat, the largest drop is in the first year, after which retirements gradually recover. At the end of five years, the adjustment process is complete.

Now let us reintroduce the actual age structure and show how this distribution changes these results considerably. After the law takes effect, some persons continue to retire voluntarily as they have all along in the first year. After the change, however, some persons who would have retired involuntarily remain in the faculty group, and therefore the number of total retirements declines considerably.

The important point is that the adjustment process (defined as the time taken for the number of retirements to rise back to the number which would have existed under no law change) is much longer than five years. The total number of retirements "lost" is still less than 5 cohorts. There are fewer "losses" each year since the adjustment process works over such a

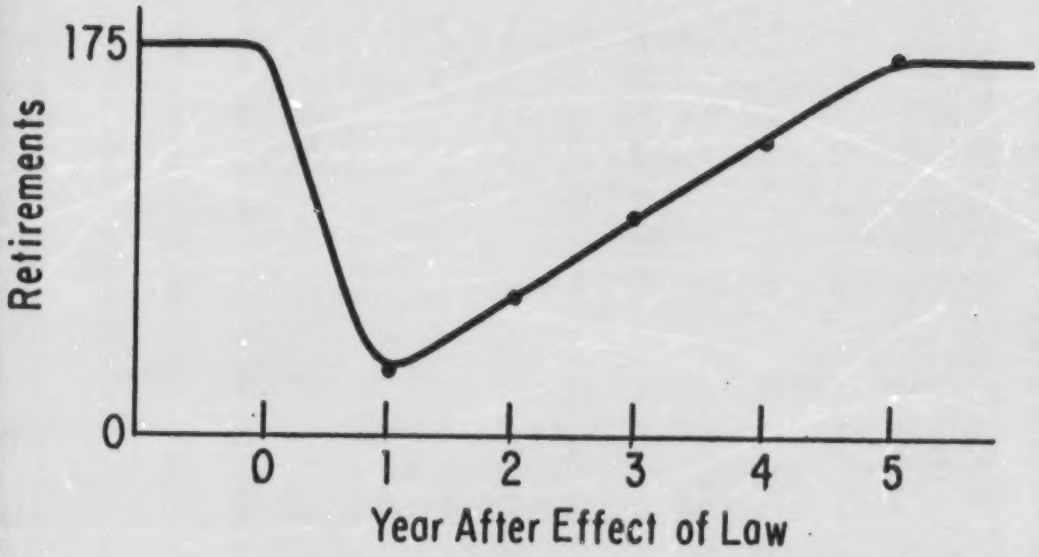

Figure 4. Effects of the law change on the hypothetical faculty with balanced age composition shown in Figure 2. The mean retirement age rises about 3 years, and adjustment takes 5 years.

long time. The reason that the adjustment process takes so long has to do with the actual unbalanced age structure.

In order to see this more clearly, the reader should again refer to Figure 2, which shows generally increasing cohort sizes approaching retirement for the next 15 years.

Now imagine the situation after five years. By then, without the law change, larger cohorts would be moving into retirement. With the law change, their retirements are delayed. Therefore, even after five years, age structure dictates that retirements will still be fewer than the number expected before the law change. The same reasoning holds for ten years. After 13 years, however, some of the very large cohorts are close enough to the new higher mean retirement age so that early retirements from these large groups will begin to raise the number of retirements well before the largest cohort reaches age 70 (or age 68, which, as we later explain, is our estimate of the mean retirement age after the law change has been in effect some years).

With all of these considerations in mind, we now present our estimates of retirements. As a final baseline, we show, in Table 6, our estimate of retirements based on the COFHE data that would take place between 1979 and 1993 without any change in the law and with constant faculty size. By way of comparison, and to give further emphasis to the importance of age structure, we show hypothetical annual retirements that would take place under a "balanced" age structure.

TABLE 6

27 COFHE Institutions
Estimated Retirements, 1979-1993, Constant Faculty Size

Year	I Hypothetical Retirements, "Balanced" Age Structure	II With Existing Age Structure, All Other Existing Practices
1979	175	92
1980	175	99
1981	175	101
1982	175	106
1983	175	109
Five Year Subtotal	875	507
1984	175	117
1985	175	132
1986	175	136
1987	175	145
1988	175	148
Five Year Subtotal	875	678
1989	175	155
1990	175	162
1991	175	173
1992	175	175
1993	175	186
Five Year Subtotal	875	851

Needless to say, annual estimates are subject to more error than 5-year grouped estimates. We nevertheless show annual numbers for several reasons. The gradual ascent, a result of rising numbers approaching retirement, is readily visible. The "cross-over" to larger than "balanced" age retirement is clearly visible in 1993.

Our numbers in Column II do not quite coincide with Mr. Southworth's (Table 14, Constant Faculty and No Extension of Mandatory Retirement Age). Ours differ mostly because we have included only Arts and Sciences Faculties, whereas two institutions supplied data for engineers, and these were included in Mr. Southworth's (larger) data set. We also excluded approximately 60 persons coded as "retired" but who remained in the part-time employ of their institutions, while these were included, as long as employed, by Mr. Southworth.

The important point, however, is that both estimates show the same essential characteristics, rising retirements through time, and a period in the 1990's when they exceed long-run expected retirements.

Next we present in Table 7 our estimates of annual retirements to 1993 after the law takes effect in 1982. For purposes of comparison, Column II from Table 1 is again included, so that the "lost" retirements are visible.

Our estimates provide for voluntary early retirements in each of the age groups 63-69, so that they are no longer "worst case" assumptions. The derivation of estimates of such voluntary early retirements is explained

TABLE 7

27 COFHE Institutions
Estimated Retirements With and Without Law Change,
1979-1993, Constant Faculty Size

Year	With Existing Age Structure, No Law Change	With Existing Age Structure, Law Change in 1982	"Lost" Retirements From Law Change
1979	92	92	0
1980	99	99	0
1981	101	101	0
1982	106	54	52
1983	109	65	44
Five Year Subtotal	507	411	96
1984	117	76	41
1985	132	81	51
1986	136	79	57
1987	145	111	34
1988	148	125	23
Five Year Subtotal	678	472	206
1989	155	132	23
1990	162	157	5
1991	173	158	15
1992	175	166	9
1993	186	172	14
Five Year Subtotal	851	785	66

later. They do not assume, incidentally, any early retirement incentive plans, but reflect our best estimate as to the pattern that would take place without such incentives.

As the previous discussion would indicate, the decline is sudden and steep, but not so steep as that in Mr. Southworth's "worst case" calculations. Gradual recovery takes place, but does so over a protracted period, again as a result of the age structure. For the five-year period ending in 1993, "lost" retirements arising from the law change have declined to about 8% of the number that would be expected under present law and practices. Again, estimates are subject to substantial error for any one year. Errors in the estimates are largely offset within 5-year groups.

It should be noted that any decrease in faculty size can have powerful and negative effects on new hiring capabilities. If, for example, COFHE faculties decreased in size in a manner similar to the decreases in the ACE Study (Corwin and Knepper, 1978), then openings "lost" to decreasing faculty size would exceed openings remaining after effects of the law change in the years 1983, 1984, and 1985, and would drop new slots to zero.* In addition, the impact varies from institution to institution. Those at which the mean

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*This illustrates again the more moderate impact of the change in the retirement age in this study with voluntary early retirements taken into account. The ACE Study showed six years in which the combined effects of "lost" retirements and faculty shrinkage would reduce new hires to zero. There would be three such years for the COFHE schools if their faculties declined in size in proportion to the ACE results.

age of retirement is now 65 will carry a disproportinately large share of the retirements "lost" to the COFHE schools. This effect will be compounded in any case where the age distribution is unfavorable. Even in these cases, however, some voluntary early retirements may be expected, so that the "worst case" results reported by Mr. Southworth are unlikely to occur.

The fact still remains that COFHE institutions (and all others) face a protracted period of diminished retirements, even though the impact is less severe in our study than in other studies.

We shall next describe the basis of our estimates of early voluntary retirement, and then examine possible institutional responses.

Estimates of Voluntary Early Retirement

Most studies of the impact of retirement legislation have examined the "worst case" (that in which everybody remains active until the mandatory age 70). One of the major differences in this study is our attempt to estimate the pattern of voluntary early retirement after the change of the law has had its effect. Our basic premise is that faculty members differ in their attitudes toward many things, including the age at which they wish to retire. Some would retire at 55, some at 60, some at 65, some at 70 and so on if there were not financial or other considerations. Given all the circumstances which now exist, there is a fairly clear pattern of voluntary early retirement. In order to estimate the specific rates of voluntary early retirement in all ages up through age 63, we have examined the number of

early retirements each year relative to the number of persons in the age cohort at all 27 schools (except those which have highly effective early retirement incentive programs--we wish to observe early retirement rates apart from the effect of such incentive programs).* The rates are fairly low but not negligible.

We examined six of the seven COFHE schools with a 68 or 70 mandatory retirement age with respect to ages 64 (where age 65 mandatory retirements began to have some influence depending on how birthdays fall in the year and how the program is administered) through 65 and 66. One school with a mandatory retirement age of 68 which has a fairly effective early retirement incentive program was omitted. In the six schools that were examined, the number of people who retire at ages 64, 65, and 66, respectively, were compared with the number of persons each year in that age cohort, thus deriving age-specific voluntary early retirement rates. The voluntary early retirement rates were similar at the six schools.

The schools with a mandatory retirement age of 68, obviously, cannot be used for estimating age-specific rates of voluntary retirement at ages 68 or 69. Furthermore, they cannot be used for estimating age 67 rates either, since some persons aged 67 are mandatorily retired, as was the case for persons aged 64 in the "age 65 retirement" schools. For

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*At the time of our study, early retirement plans were in effect at Amherst, Chicago, Cornell, Dartmouth, MIT, Penn, Princeton, Smith, Rochester, Stanford, Trinity, Wesleyan, and Williams. Many were installed during the 1973-79 period under review, and significant numbers of induced early retirements were observed at only a few schools throughout the period.

voluntary early retirement rates at ages 67 and 68, we examined the only two schools which presently have age 70 retirements. We cannot directly observe the voluntary rates for age 69 since some such retirements are voluntary and some are not, again depending on how the age 70 mandatory retirement is defined and administered. We have used 5% for age 69 arbitrarily. The estimated age-specific-voluntary-retirement rates are shown in Table 8. We have lumped together at age 63 all retirements that take place before that age since they are relatively few in number. The peaks in observed voluntary early retirement at age 62 and age 65 are presumably related to the availability of social security benefits at those ages.

The data suggest that approximately 50% of all faculties will have retired voluntarily before age 70. This is a slightly higher percentage than shown in Table 3; in the interest of conservatism, we have arbitrarily adjusted the sum down to 48%.

Age-specific-voluntary-early retirement rates as described above are shown in Table 8. The predicted mean age at retirement is calculated to be about 68.5 years including the 52% retiring at age 70. We likewise note that ages shown are measured at the middle of the academic year, and will have advanced by .5 years when retirement is effective.

Table 8

Age (measured at middle of academic year)	Percent of Original Cohort Size Retiring Voluntarily
63*	8%*
64	5%
65	8%
66	5%
67	12%
68	5%
69	5%
Total Voluntary Retirements	48%

*Sum of all retirements prior to age 63; the largest number takes place at 62.

Early Retirement Incentive Plans

General Considerations

The desire to retire early is quite widespread (see Introduction) with financial pressures as the most frequently mentioned deterrent to early retirement. People differ in their desires with respect to early retirement, as they do in all other respects of their lives.

Voluntary early retirement occurs, therefore, in the absence of incentive plans. Our own data in Table 3 suggest age-specific cohort fractions at about 5% with higher peaks at ages 62 and 65 (Social Security effects) and 67. These do not quite coincide with Mr. Southworth's results shown in his Table 9. We have eliminated as best we could "induced" early retirements (incentive plans) and stated our numbers as percentages of persons in the age cohorts. The peak at age 67, not related to Social Security, seems to be a choice point for faculty members at institutions with age 70 normal and mandatory retirements. The number of observations is small, so that we have less confidence in this estimate than we have in the others.

Incentive plans may be viewed as devices to move larger numbers of people over the retirement decision threshold. We note that all schools having such plans experience lower mean ages of retirement than schools of similar mandatory retirement age but without such plans. This finding supports the view that some persons in all faculties desire to retire early; and some will do so on their own and more will do so if financial barriers are diminished.

Incentive plans have costs to the institutions; indeed, they have costs higher than those most readily perceived. Incentive plans, if offered to one person or some defined category of persons, must legally be offered to all in that class. Therefore, those who intended to retire early anyway without incentive will, naturally, retire early with incentives. The true cost per additional induced retirement is therefore larger than the observed cost attached directly to any induced retirement. We shall return to these cost matters presently as we examine the features of some existing incentive plans.

Incentive plans operate on salary-replacement dollars (either through enlarging third-party benefit plans or by direct supplements paid by the institutions). They also operate with respect to fringe benefits other than retirement benefits. A general proposition is that salary and benefit issues should be structured in order to make an early retirement decision as "dollar-neutral"* for the retiree as possible. With respect to policy and retirement income, this principle is fraught with difficulties which we discuss later. There are some fringe benefit areas in which it is more readily implemented. These we discuss first.

Medical Coverage is a matter of increasing concern with advancing age, and a source of much uncertainty and anxiety in our inflationary era.

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*Strict "dollar neutrality" would be defined as an arrangement which left one's annual income for future years unaffected by a decision to retire early or to continue working.

Most institutions already continue such coverage (usually in the form of a medicare supplement) for regular retirees. Continuing this group coverage for early retirees removes one of their financial concerns. The cost of so doing may be shared by the retiree and the institution, since most active faculty are accustomed to this sharing. The cost is small relative to supplements or purchased additional retirement benefits. We expect that institutions designing incentive plans would wish to include this feature. The COFHE institutions with formal early retirement plans do so.

Group Life Insurance. This coverage is presumably less important as financial responsibility for young children declines and as the death benefit feature in most retirement plans mounts. Nevertheless, the cost to the institution is low, especially when compared to salary and retirement supplement costs. Again, the COFHE institutions with early retirement plans include this feature.

Tuition Benefits for children, if offered to active faculty, should be considered for continuation. Potential early retirees are unlikely to have college-age children in large numbers. These costs would in any event be borne if potential retirees continued in active status. Though these may represent larger annual costs for those eligible than those for medical or life insurance benefits, they do address another source of major financial concern for those few persons still with college-age children. A careful selection of the earliest age of eligibility for early retirement plans should

enable each institution to balance costs and benefits in this area.

Faculty Privileges. Access to parking, libraries, recreational facilities, and campus health clinics are readily managed at most institutions. They are probably valued by potential early retirees at levels well above their (usually negligible) costs to the institutions. In ascending order of costs, access to offices, secretarial assistance (and laboratories in the sciences) may be important to some potential early retirees who may remain in the geographical area. Individual institutional circumstances vary too greatly for us to do more than mention these as issues to be addressed.

Salary and Retirement Income. It is in this area that "dollar neutrality" of early retirement decisions is a difficult issue. In general, the financial incentives for continued work are strong, and stronger still in an inflationary climate. They are not insurmountable--witness the number of voluntary early retirements without incentive plans, and the number of additional early retirements with these plans.

Future disposable income rises sharply with continued work with respect to:

1. salary
2. salary increments
3. further contributions to retirement funds
4. a longer period during which retirement fund earnings themselves add to the fund
5. a shorter period during which benefits are paid (hence higher annual annuities).

These are partially offset by:

1. reduced income tax liabilities upon cessation of employment (reduced by lower taxable incomes and, at 65, by rising federal income tax exemptions, a feature also found in some state and local income taxes)
2. cessation of Social Security deduction
3. cessation of TIAA-CREF contributions by the individual.

Given the size of these financial rewards for continued work, maintaining "financial neutrality" on the early retirement decision is unattainable in practical terms, and unnecessary for those who place some value on early retirement. Within limits, however, much can be done to narrow the very wide differences in net disposable income at various ages. Suppose, for example, an institution had a "defined benefit" retirement plan rather than the "defined contribution" plan now so widely in effect. Dollar benefits would then be based on formulae including late earned salaries and years of service. Contributions would be made according to actuarial calculations required to provide the benefits thus determined. The present "defined contribution" plan so widely used involves payments (usually to TIAA-CREF) according to a specified formula, with the resulting benefits being determined at the level that can be sustained by the cumulated contributions and investment earnings.

Under "defined contribution" plans, the longer contributions continue, the larger the ultimate benefits will be. "Defined benefit" plans, on the other hand, can, in the extreme, be structured so as to provide the same retirement benefits to a given individual whether that individual retires at

65, 70, or, for that matter, any other age.

As we look toward 70 as the new mandatory age, 65 becomes especially attractive as a "target" early retirement age primarily because of the operation of federal income tax extra exemptions. Major attention is given here to the age 65-70 period. Institutions, then, should consider the following:

1. Establishing 65 as the normal retirement age, with the cessation of retirement contributions at that age. This would diminish somewhat the gains from further work. This action, incidentally, should not be viewed solely as a device for saving money and reducing incentives. Rather, institutions' plans for retirement income should adopt 65 as the age when an accumulation sufficient to meet a targeted retirement income will be attained.

2. Consideration should be given to defined-benefit plans with larger possibilities for "financial neutrality," especially across this 65-70 range. This is a highly technical matter well beyond the scope of this study. Institutions that have not begun to explore this possibility may wish to do so with the aid of the appropriate expert actuarial talent.

3. More care in performance reviews on salary decisions. The salary increment contributes to the rise in disposable income (and ultimate retirement benefits) from ages 65 to 70, and thus to retirement dis-incentives. We are, of course, not advocating salary discrimination, which is, in any case, illegal. We are advocating strict merit increases rather than "across the board" increases. Annual appraisals of teaching, research, and institutional service for all faculty members for all salary decisions are needed if these measures are not already employed.

Beyond these measures, differentials which lead to higher returns for continued work are quite beyond the control of the institutions.

A review of several specific institutional plans for voluntary early retirement leads to the following observations:

1. Such plans do get results. Early retirements rise in number (even small numbers of individuals are significant because cohort sizes are small) and lower the mean age of retirement. At Wesleyan, for example, the mandatory retirement age is 68. In the 5-year period under review, 10 of 12 persons retired early, with the mean age of retirement dropping about three years. Some of these had already dropped to a fractional load, fractional salary basis, which Wesleyan also offers. At Stanford (retirement age 65) about one-fourth of those in the cohorts retired early, with the average age of early retirees approximately 59. This pulled the average for all retirees down about 1 1/2 years. Costs at Stanford and Wesleyan generally run between 30% and 50% of salaries and benefits that would be paid without early retirements. Those, understandably, appear to be the two most successful plans among the COFHE schools.

2. Costs, stated as fractions of salaries and benefits that would have been paid in the absence of early retirement vary. They are higher, as one might expect, at early ages of retirement, and lower at later ages. They also vary with the number of years remaining to retirement. The sooner, the more costly. Since age 70 will soon become uniform, these two sources of variation will merge into one.

3. There are numerous combinations of the various elements in early retirement incentive plans so that only several possible (but widely used) combinations can be discussed.

   (a) Continuation of payments from the institution to early retirees (without yet drawing Social Security or private retirement benefits); then discontinuing the payments when the retirement benefits begin. Retirement contributions may or may not be continued. If contributions are continued, benefits available to the individual at normal retirement age are similar to those that would have been available without early retirement.

   (b) Commencement of Social Security (if 62 or older) and retirement benefits at early retirement. Institutional supplements either to the normal retirement date, or for life.

These choices represent the ends of the spectrum--from supplements only until normal retirement (at which point retirement benefits take over), to the immediate beginning of all available retirement benefits (at lower

levels than would obtain at normal retirement age).

Intermediate combinations are observed. One institution, for example, has early retirees draw Social Security and pays a supplement, which ends at normal retirement and is then replaced by the commencement of TIAS-CREF benefits.

In all cases, the institution pays something, and the individual receives something--something more than retirement benefits already existing would provide. Differences between what is paid and what is received as disposable income differ only with respect to the operations of the tax laws.

A set of supplements so generous as to maintain, in effect, pre-retirement incomes is both too expensive and unnecessary (unnecessary because people will respond to lesser amounts, and retire early in significant numbers). It appears that, in the 65-70 zone, payments equal to about 1/3 of salary will induce 30-40% of each cohort to retire early at ages 65-67, and drop the mean age of retirement about 1 1/2 years. This is a very rough estimate based on small numbers. The larger fraction of early retirees at Wesleyan is partly offset by the smaller number at Penn, where the mandatory retirement age for many older tenured faculty is already 70.

Part-Time Employment Options

Many faculty members may welcome the opportunity to reduce their commitments of time and energy at their institutions before they discontinue

them altogether via retirement. They may be willing, therefore, to accept the reduced salary accompanying this change.

Again, we note that individuals differ in their desires and circumstances. Some would welcome such an arrangement; others would not. The mutual benefits to individuals and institutions are not destroyed by virtue of less than 100% acceptance.

For individuals who prefer this arrangement for a period over both full-time work and full retirement, the very fact of their preference is adequate evidence of benefit to the individual. Moreover, the arrangement addresses both financial needs and needs to remain active along with desires for more time to schedule as one desires.

For institutions, there are also benefits if new openings are, in fact, desired. As an example, suppose that 20% of each age cohort approaching retirement opted for four years of half-time work at half-salary. This is, with respect to dollar costs in salary, and with respect to new positions opened, equivalent to a 10% early retirement rate four years in advance of mandatory retirement. If that age were 70, and all others retired at 70, this option alone would be equivalent to a reduction in the mean age of retirement by .4.

As our previous analysis should have made clear, this is not negligible; it has an effect equivalent to increasing annual replacement appointments by 10% of a cohort size. Put anotner way, if the new law increases the mean age of retirement by 2-2.5 years, with the concomitant "loss"

over the long term of 2-2.5 cohorts of retirements, this development alone could absorb 18-20% of that "loss."

Such an arrangement might entail working half-time throughout the year, or full-time for one-half of each year. Though half-time is used for purposes of illustration, other fractions may readily be substituted. As we have noted, Wesleyan already offers this option, and has had some takers.

Periods away from work may provide additional financial support via Social Security benefits for those in eligible age ranges. Such arrangements, to be sure, do pose administrative difficulties. "Half-time" or "one-third time" may not easily be defined, given present practices with respect to teaching loads, research, administrative duties, faculty committee assignments, and other institutional chores. We cannot regard these as insurmountable. Institutions have wrestled with, and solved, more difficult issues of definition.

Another pitfall to be considered involves a tenured faculty member who opts for the part-time arrangement and then seeks to return to full-time status. Institutions making replacement appointments or otherwise committing the funds involved need assurances of stability in these arrangements. The legal status of such a change of mind may be ambiguous under present customs and interpretations of contractual arrangements. An early retirement followed by a contract for term would be a clear-cut resolution. If, in a given institutional setting, the course seems inappropriate, a

modification of tenure rights which either limits the right to return to full-time status, clearly extends tenure rights to such part-time persons, or provides adequate notice for a change in the fraction of time employed is not inconceivable. This is surely a less drastic modification of tenure than many others which have been discussed.

Maintenance of full benefits, including full-salary-equivalent retirement contributions adds relatively little to the overall cost. When full retirement does take effect, retirement income will not have been reduced by the period of part-time service.

Recommendations for the Institutions

1. Our first recommendation is that institutions have available sufficient information so that their present and prospective situations with respect to faculty retirement can be clearly seen. Our own analysis of data provided by the individual institutions in this study will be available to them.

2. With respect to institutional responses to the retirement age change, we see three basic patterns of response:

   (a) The first is to do nothing; that is, let nature take its course; let the number of retirements decline and then gradually rise again. The length of the adjustment process would then depend on a particular school's faculty age structure, new patterns of voluntary early retirements, and the resulting new mean retirement age.

   (b) The second is to apply a set of incentives so powerful that the mean age of retirement stays approximately where it is now, thus avoiding any impact at all.

(c) The third is to apply a somewhat weaker set of incentives which will raise the number of early retirements (moderating the impact of the law) and then gradually or at some future point in time remove the incentives, possibly at a time when retirements are rising again.

Response option (b) above is probably too costly to consider. It has a further problem; once adopted, it would have to be kept indefinitely or any change would produce a large drop in the number of retirements; that is to say, one would merely have deferred the "problem" from 1982 until some future date. Our preference is for pattern (c) above if incentives are to be instituted at all. There is, after all, coming in the 1990's (dates vary from one school to another) a time when the number of retirements will increase. A set of early retirement incentives less costly than (b) would indeed have the effect of moderating the impact of the law just now when retirements are fairly few in number anyway. If the incentive program is gradually unwound (at a pace consistent with the coming rise in the number of retirements), then the impact of the law if partially deferred until a point when the burden can more easily be borne. We are mindful that institutions create serious problems if they install a set of incentives and then attempt to remove them. Our further proposal is that any incentive plan which might be adopted be made available only to those now age 55 or over (or any future tenure appointees who may have been in 1980 age 55). In this fashion the incentive plans will automatically "self-destruct" a few years before the number of retirements begins to exceed a sustainable steady state number. We propose age 55 as the "cut-off" rather than 50 since benefits of this

nature can always be extended to additional cohorts more easily than they can be revoked. We are not recommending that persons aged 55 be eligible for incentive early retirement at that age. We intend, rather, that a plan appropriate to an institution be adopted, and that eligibility for the plan be restricted to those now 55 or over. A plan, for example, might provide income supplements beginning at age 62. Those now 55 or more could then retire at 62 when they attain that age.

We recommend, therefore, that institutions make a conscious choice either to leave matters as they are, or adopt a set of early retirement incentives of lengthy but limited duration. If the latter course is adopted, there will be an extra-institutional benefit to prospective young entrants into faculty positions. In addition, the precipitous drop, and subsequent recovery in the 1990's, would both be modified. The benefits also flow to the graduate programs by lessening the cyclical behavior of opportunities for their graduates.

3. We have discussed incentive plans in general and have reviewed some existing plans as to costs and outcomes in our earlier section. We recommend, more specifically, that:

(a) medical, life insurance, and possibly tuition benefits be continued for early retirees.

(b) access to campus facilities and services be maintained, as far as practical at each institution.

(c) attention be concentrated on the age 65-69 group when Social Security is most helpful and where the spectrum of costs to

approach "financial neutrality" in the early retirement decision is not unmanageably large. Institutions at which the present retirement age is 65 may wish to consider earlier ages of eligibility for retirement incentives, but should be conscious of the much higher costs, especially below age 62 where Social Security does not operate at all.

(d) consideration be given to defined benefit plans which further narrow the gains from retiring at age 70 rather than, say, 65.

(e) if (d) is not seen as desirable or possible, that contributions to retirement plans cease at 65, at least removing one element that destroys financial "neutrality."

4. Retirement Information and Counseling. We recommend that efforts be made to provide systematic and individual specific information to faculty members (and others).

Most faculty members receive annual TIAA-CREF estimates of retirement income from TIAA-CREF that will begin at age 65. Few have any specific idea as to what incomes would be at other retirement ages. Institutions which do not already provide this information should do so. Faculty members, at some point in their fifties, and again in the early sixties, should be invited to group sessions at which all aspects of retirement planning are discussed.

CONCLUSIONS

Our study, like all others, shows that a mandatory retirement age no lower than 70 will diminish employment opportunities for prospective junior faculty members, and will continue to do so until the 1990's. These effects are compounded by the age structure of existing faculties, and will be further worsened if faculties decrease in size.

The impact is less severe than in other studies, since we do not make the "worst case" assumption in which all faculty members defer retirement until age 70. Retirements decline in 1982, and then gradually rise by 1992 to 90% or more of the level which would have occurred without the law change.

Widespread adoption of incentives for early retirement, or opportunities for part-time activity, can moderate this impact at costs which appear to be manageable. There appears to be ample time to have such plans ready to operate in the academic year 1981-1982 when they will be most urgently needed.

Indeed, if incentive plans with limited life can be put into operation for a decade or so and then removed or made less attractive, we shall have an opportunity to move faculties toward a more nearly balanced age structure. New appointments will be encouraged during the "lean years" just ahead, and then, will not rebound so sharply in the 1990's. This "rebound"

is coming, both with respect to prospective college enrollments and the moving to retirement of the "bulge" in faculty age structure.

No one can "fine tune" in these matters so as to move immediately to a steady and maintainable pace of new appointments, but large swings can be moderated. This action will benefit the institutions in maintaining a more nearly even flow of new appointments. It will certainly benefit prospective graduate students and the institutions with graduate programs as well.

Individual COFHE institutions can install incentive retirement plans and part-time appointments for older faculty, as suits their own circumstances. The 30 COFHE institutions together can do more. COFHE should support federal and private efforts to create employment opportunities for new PH. D. 's during the decade 1982-1992 in postdoctoral fellowships, research appointments, and similar opportunities. While a decade is a long time, those asked tu support such programs can be assured that they will not be needed indefinitely. This tunnel does have an end with some visible light.

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